

ABSTRACT

An alternating phase shift mask with dark loops thereon, a memory array fabricated with the alternating phase shift mask, and a method of fabricating the memory. The dark loops in the
5 mask always separate first regions with 180° phase difference from second regions with 0° phase difference to define active areas or gate-lines in a DRAM chip. By using the alternating phase shift mask to pattern gate-lines or active areas in a DRAM array, no unwanted image is created in the DRAM array and only
10 one exposure is needed to achieve high resolution requirement.